ZHMUR, V.A., prof. (Moskva)

"Methods for accelerating the healing of fractures" by G.V. Golovin. Reviewed by V.A. Zhmur. Vest.khir. 83 no.8:144-146 Ag '59. (MIRA 13:1)

(FRACTURES)

ZHMUR, V.A. (Moskva, Kutuzovskiy prospekt, d.12, kv. 52); ANOKHIN, L.A.

Physiological basis of thymectomy for the treatment of myasthenia. Grud. khir. 2 no.6:104-110 N-D '60. (MIRA 14:1)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S.I.Spasokukotskogo (dir. - akademik A.N. Bakulev) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova i khirurgicheskogo otdeleniya imeni N.I.Pirogova 1-y Gradskoy bol'nitsy (dir. - zasluzhennyy vrach RSFSR L.D.Chernyshov).
(THYMUS GLAND--SURGERY) (MYASTHENIA GRAVIS)

ZHMUR, V.A., prof.

Embolism of the pulmonary artery in surgical patients. Vest. AMN SSSR 15 no.9:38-48 '60. (MIRA 13:11)

1. Fakul'tetskaya khirurgicheskaya klinika imeni S.I.Spasokukotskogo II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova.

(PULMONARY EMBOLISM)

ZHMUR, V.A., prof.; BLISEYEVA, A.V.

Surgical treatment of cancer of the large intestine (excluding the rectum). Sov.med. 24 no.1:38-41 Ja '60. (MIRA 13:5)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (dir. - akad. A.N. Bakulev) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

(INTESTINE LARGE neoplasms)

ZHMUR, V.A., prof.

The syndrome of the superior vena cava and its surgical significance. Khirurgiia 36 no.10:84-92 O '60. (MIRA 13:11)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S.I. Spasokukotskogo (dir. - akad. A.N. Bakulev) II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova.
(VENAE CAVA)

ZHMUR, V.A.; RABOTNIKOV, V.Sh.

Surgical treatment of chronic pancreatitis. Vest. khir. 84 no. 4:33-38 Ap '60. (MIRA 14:1)

(PANCREAS--SURGERY)

ZIMUR, V.A., prof.; RABOTNIKOV, V.Sh.

Chronic pancreatitis and lesions of Vater's ampulla. Vest.khir. 85 no.12:89-95 D '60. (MIRA 14:1)

1. Iz fakul'tetskoy khirurgicheskoy kliniki im. S.I. Spasokukotskogo (dir. - prof. A.N. Bakulev) 2-go Moskovskogo meditsinskogo instituta im. N.I. Pirogova. Adres avtorov: Moskva, Leningradskiy pr., d.8., 1-ya Gradskaya bol'nitsa.
(PANCREAS--SURGERY) (DUODENUM--SURGERY)

ZHMUR, V.A.

Clinical and roentgenological syndromes in tumors and tumorlike formations of the mediastinum. Vest.AMN SSSR 16 no.1:49-53 '61. (MIRA 14:3)

1. Fakul'tetskaya khirurgicheskaya klinika II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.
(MEDIASTINUM--TUMORS)

BRAUDE, Isaak Leont'yevich [deceased]; PERSIANINOV, Leonid Semenovich. Prinimali uchastiye: BRAUDE, A.I., doktor med.nauk; GRANAT, N.Ye., kand.med.nauk; ZHMUR, V.A., prof.; MAKEYEVA, O.V., doktor med. nauk; RAFAL'KES, S.B., dotsent. PORAY-KOSHITS, K.V., red.; BUL'DYAYEV, N.A., tekhn.red.

[First aid in obstetrical and gynecological pathology] Neotlozhnaia pomoshch' pri akushersko-ginekologicheskoi patologii. Moskva, Medgiz, 1962. 358 p. (MIRA 15:5)
(FIRST AID IN ILLNESS AND INJURY)
(OBSTETRICS)

ZHMUR, V.A. (Moskva, G-248. Kutuzovskiy prosp.,d.12,kv.52)

Atriomammary anastomosis for nononcological obturation of the superior vena cava. Grud.khir. 2 no.2:112-115 Mr-Ap '60. (MIRA 16:7)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S.I. Spasokukotskogo (dir.-akademik A.N.Bakulev) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova (dir.-dotsent M.G. Sirotkina).

(VENA CAVA--DISEASES) (MAMMARY VEIN)
(HEART--SURGERY)

ZHMUR, V.A.; BUYANOV, V.M.

Alloplasty in abdominal and chest surgery. Trudy NIIEKHAI no.5:177-184 '61. (MIRA 15:8)

1. Iz kafedry fakul'tetskoy khirurgii 2-go Moskovskogo gosudarstvennogo meditsinskogo instituta im. N.I.Pirogova.
(ABDOMEN—SURGERY) (CHEST—SURGERY) (PLASTICS IN MEDICINE)

BAKULEV, A.N., prof., red.; BUSALOV, A.A., prof., red.; ZHMUR, V.A., prof., red.; IVANITSKAYA, M.A., dots., red.; KOLESNIKOV, S.A., doktor med. nauk, red.; SERGEYEV, V.M., red.; ZAKHAROVA, A.I., tekhn. red.

[Transactions of the First Jubilee Scientific Session of the Institute for Chest Surgery of the Academy of Medical Sciences of the U.S.S.R.] Trudy 1-i iubileinoi nauchnoi sessii, 2-4 dekabria 1957 g. Moskva, Pod red. A.A.Busalova. Moskva, Medgiz, 1959. 263 p. (MIRA 15:5)

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut grudnoy khirurgii. 2. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR, Institut grudnoy khirurgii Akademii meditsinskikh nauk SSSR (for Bakulev). 3. Direktor fakul'tetskoy khirurgicheskoy kliniki Vtorogo Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I.Pirogova (for Busalov). 4. Institut grudnoy khirurgii Akademii meditsinskikh nauk SSSR (for Zhmur, Ivanitskaya, Kolesnikov).

(CHEST--SURGERY)

ZHMUR, V.A. (Moskva, Leninskiy prosp.d.8,kv.85)

Methodology of gastroesophageal anastomosis in the case of esophagocardiac resection. Grud. khir. 1 no.3:87-91 My-Je '59. (MIRA 15:3)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (dir. - akademik A.N. Bakulev) II Moskovskogo meditsinskogo instituta imeni Pirogova (dir. - dotsent M.G. Sirotkina).
(ESOPHAGUS—SURGERY)

ZHMUR, V.A.; RYNEYSKIY, S.V.; YEFUNI, S.N.

Electroencephalographic studies during artificial hibernation.
Eksp.khir.i anest. 6 no.3:30-32 '61. (MIRA 14:10)
(ELECTROENCEPHALOGRAPHY) (ARTIFICIAL HIBERNATION)

ZHMURIN, D.N.

Use of intercoupled relay distributors with line metering relays in remote control devices. Trudy NPI 124:23-30 '62. (MIRA 15:11)

(Electric relays)
(Remote control—Equipment and supplies)
(Electric networks)

SABADASHEV, V.P.; GERASIMOV, V.B.; ZHMURIN, D.N.

A remote control device for industrial use with phase and qualitative method for selection. Trudy NPI 124:53-60 '62. (MIRA 15:11)

(Remote control—Equipment and supplies)

1. ZHAURIN, I. M.

2. USSR (600)

4. Moscow - Buildings, Prefabricated

7. How the first large-panel residential building in Moscow stood the test in operation. Biul. stroi. tekh. 10, No. 9, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

ZHMURIN, L.M., kand.veterinarnykh nauk

Skin temperature and thermoregulation in sows. Trudy VIEV 22:213-218 '59. (MIRA 13:10)
(Skin) (Body temperature--Regulation)

ZHMURIN, L.M., kand.veterinarnykh nauk

Investigation of gas exchange and energy metabolism in young pigs. (MIRA 13:10)
Trudy VIEV 22:219-229 '59.
(Respiration) (Metabolism)

ZHMURIN, L.M., kand.veterinarnykh nauk

Gas exchange and energy exchange in sows. Trudy VIEV 22:230-239 '59. (MIRA 13:10)

(Respiration) (Metabolism)

USSR/Farm Animals. Horses. Q

Abs Jour: Ref Zhur-Biol., No 20, 1958, 92551.

Author : Zhmurin, L.M.
Inst : All-Union Scientific Research Institute for Horse Raising.
Title : Data on the Innervation of the Ovary, Follicles and Corpus Luteum in Horses.

Orig Pub: Byul nauchno-tekhn. inform. Vses. n.-i. in-t konevodstva, 1957, No 3, 14-16.

Abstract: It was shown in 25 preparations using the impregnation method of Bilshovskii-Gros as modified by Kompas that a well developed nerve apparatus exists in the ovary which includes bundles of medullated and non-medullated nerve-fibers and nerve endings. The area of the ovulatory fossa of the ovaries is innerved most inten-

Card : 1/2

USSR/Farm Animals. Horses. Q

Abs Jour: Ref Zhur-Biol., No 20, 1958, 92551.

sively. Nerve endings in the follicle walls in all stages of maturity are often found in the area of the ovarian follicles.

Card : 2/2

ZHMURIN, L.M., kand.veter. nauk

"Artificial insemination of farm animals" by F.V.Ozhin and others. Reviewed by L.M.Zhmurin. Veterinariia 37 no.1:91-93 Ja '60. (MIRA 16:6)

(Artificial insemination)
(Ozhin, F.V.)

ZIMMURIN, L. M.

"The new edition of the book on artificial ensemination of animals."

Veterinariya, Vol. 37, No. 1, 1960, p. 91

Cand. Vet Sci.

ZHMURIN, L.M., kandidat veterinarnykh nauk.

Studying the operation of ventilation apparatus in sow houses. Veterinariia 34 no.4:77-78 Ap '57. (MIRA 10:4)

1. Vsesoyuznyy institut eksperimental'noy veterinarii.
(Swine houses and equipment--Ventilation)

ZHMURIN, L.M.

"Data on the Zoohygienic Reasons for Standardized Planning of Farrowing Pens."
Cand Vet Sci, All-Union Inst Experimental Veterinary Sci, Min Agriculture
USSR, Moscow, 1955. (KL, No 14, Apr 55)

SO: Sum.No1 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations
Defended at USSR Higher Educational Institutions (16).

L 36940-66 EWT(m)/EWP(w)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/WB

ACC-NR: AP6019713 SOURCE CODE: UR/0128/66/000/006/0003/0005

AUTHOR: Korolev, V. M. (Candidate of technical sciences); Kolobashkin, B. M. (Candidate of technical sciences); Zhmurina, Yu. A. (Engineer); Maslov, A. D. (Engineer); Malinina, A. D. (Technician); Kuyanova, M. M. (Technician)

ORG: none

TITLE: High-strength stainless steel VNL-1

SOURCE: Liteynoye proizvodstvo, no. 6, 1966, 3-5

TOPIC TAGS: stainless steel, high strength steel, austenitic martensite steel, precipitation hardenable steel/ VNL-1 stainless steel

ABSTRACT: A new austenitic-martensitic cast stainless steel designated VNL-1 has been developed. The steel contains 0.08% max C, 0.9% max Mn, 0.75% max Si, 14.07—14.60% Cr, 6.45—7.50% Ni, 0.68—0.83% Mo, 0.016—0.018% S, and 0.028—0.30% P. At room temperature the steel has a tensile strength of 111—123 kg/mm^2, a yield strength of 84—93 kg/mm^2, an elongation of 11.8—19.0%, a reduction of area of 37—45%, and a notch toughness of 5—8 mkg/cm^2. The corresponding figures for -196C are 161—180 kg/mm^2, 107—147 kg/mm^2, 9—16%, 14—21%, and 4—7%. At 500C the steel has a tensile strength of 65—80 kg/mm^2, an elongation of 8—10%, and a reduction of area of 20—40%. In cyclic tests under a stress of 77.5—88 kg/mm^2, the steel withstood

Card 1/2 UDC: 621.74:669.15-194.55

ACC NR: AP6019713

6000—14000 cycles at a frequency of 8 cycles/min. Under axial stresses, the steel has a fairly low notch sensitivity. The steel can be successfully welded with argon-shielded arc in either the as-cast or heat-treated conditions. Fully heat-treated welds have a strength of over 90 kg/mm^2 and a satisfactory notch toughness in the range -196C to 20C. The corrosion resistance in SO_2 and in sea water of VNL-1 is equivalent to that of EI696 and 268L steels. The steel is used for investment castings into ceramic molds. Orig. art. has: 7 figures and 4 tables. [FM]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 5039

Card 2/2

ZIMURKO, I. (Sumskaya oblast')

How to make models. Geog. v shkole 18 no.1:63 Ja-F '55. (MLRA 8:3)

1. Boromlyanskaya shkola imeni V.I. Lenina.
(Surfaces, Models of)

ACCESSION NR: AP4012029 S/0185/64/009/001/0032/0037

AUTHOR: Shneyder, A. D.; Zhmurko, I. S.

TITLE: Optical and photoelectric characteristics of the system HgTe-CdTe

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 1, 1964, 32-37

TOPIC TAGS: Hg, Cd, HgTe, CdTe, HgTe-CdTe, solid solution, optical property, photoelectric property, forbidden gap, forbidden band, energy gap, energy band; crystal, energy level, photosensitivity, photoconductivity

ABSTRACT: The present work was carried out because of the absence of complete data on the optical and photoelectric properties of HgTe-CdTe solid solutions rich in CdTe. An investigation was made of the spectral characteristics of the refractivity, absorption and photosensitivity of samples of such compounds in the range of 0.6 - 2.0 microns at 100 and 293K. The refractive index is practically independent of the wavelength in the region of transparency. The longwave region of absorption curves of samples with 25-70% HgTe is well described by the dependence $\alpha \sim \lambda^2$, which indicates free-carrier absorption. The forbidden gap

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ACCESSION NR: AP4012029

ΔE_{opt} and its temperature coefficient $\beta = \frac{\Delta(\Delta E_{opt})}{\Delta T}$ were obtained from the absorption curves. The energy gap ΔE_{pc} (pc = photoconductivity) was determined from the wavelength $\lambda_{\frac{1}{2}}$ of the spectral curves of photosensitivity. The corresponding values of r, ΔE_{opt}, ΔE_{pc} and β are given. In samples with 10-50% HgTe the photosensitivity temperature dependence differs from that in samples with 10% HgTe; this fact indicates a different mechanism of photoconductivity. Orig. art. has: 4 formulas, 5 figures, and 1 table.

ASSOCIATION: Drogoby*ts'ky*y pedinsty*tut im. Iv. Ya. Franka (Drogobych Pedagogical Institute)

SUBMITTED: 22Jun63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 005 OTHER: 011

Card 2/2

SHNEYDER, A.D.; ZHMURKO, I.S.

Optical and photoelectric characteristics of the system HgTe - CdTe. Ukr. fiz. zhur. 9 no.1:32-37 Ja '64. (MIRA 17:3)

1. Drogobychskiy pedagogicheskiy institut im. Iv. Franko.

24.2600

36483
S/181/62/004/003/035/045
B108/B104

AUTHORS: Shneyder, A. D., and Zhmurko, I. S.

TITLE: Photoelectrical properties of mercury-activated cadmium telluride layers

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 806-807

TEXT: Cd-Hg-Te layers prepared by heating CdTe with mercury vapor were studied under conditions of "transverse" and "longitudinal" illumination. The ratio of photocurrent to dark current was somewhat greater in the case of "transverse" illumination whereas the absolute amount of photocurrent in this case was only about one thousandth of the photocurrent from "longitudinal" illumination. The electrical and photoelectrical properties were directly dependent on the vapor pressure of the mercury in heating, i. e., on the amount of mercury diffused into CdTe. The photoconductivity maximum which for CdTe lies at about 830 mμ is shifted to longer waves when mercury is added. This behavior is attributed to the formation of solid solutions of the type xCdTe-(1-x)HgTe. There are 2 figures and 4 references: 3 Soviet and 1 non-Soviet. The reference to the English-

Card 1/2

Photoelectrical properties of ... S/181/62/004/003/035/045
B108/B104

language publication reads as follows: W. D. Lawsow et al. J. Phys. Chem. Solids, 2, 325, 1959.

ASSOCIATION: Drogobychskiy gosudarstvennyy pedagogicheskiy institut im. I. Franko (Drogobych State Pedagogical Institute imeni I. Franko)

SUBMITTED: April 7, 1961 (initially) November 17, 1961 (after revision)

Card 2/2

I 17024-63

TITLE: The influence of admixtures on the photoconductivity of thin layers of cadmium telluride.

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 8, no. 4, April 1963, 487-488

TEXT: Thin coatings of CdTe, applied in a vacuum on a hot sublayer and heated in mercury vapors have considerably better photoconductivity than coatings untreated with mercury. The effect of other elements on the photoconductivity of CdTe coatings were studied. Thin CdTe coatings were heated in the vapors of the following elements: silver, indium, tin, bismuth, sulfur, selenium and tellurium. Most of these elements had no effect on the photoconductivity of CdTe coatings. However CdTe coatings heated in bismuth vapors at 380°C have a photoconductivity 4-5 times greater than pure CdTe coatings. An assumption is made on the mechanism of action of bismuth and mercury vapors on CdTe coatings affecting the electrical and photoconductivity: in the case of using the solution HgTe-CdTe is formed; in the case of bismuth, it enters the lattice of CdTe as a impurity which results in a decrease in the number of recombination centers near the surface of the sample.

ASSOCIATION: Instytut fizyky pivnichnykh rayoniv (Institute of Physics of Northern Regions)

SUBMITTED: October 10, 1962

Card 1/1

SOURCE: RZh. Fizika, Abs. 5E499

AUTHOR: Shneyder, A. D.; Zhmurko, I. S.

TITLE: Electric and photoelectric properties of cadmium telluride layers

CITED SOURCE: Nauk. zap. Drohobyts'k. derzh. ped. in-t, vyp. 8, 1962, 3-9

TOPIC TAGS: cadmium telluride, photoelectric property, electric property, photoconducting film, photoconductivity

TRANSLATION: The optimal conditions for obtaining photoconducting CdTe films are investigated. The best results were obtained by condensing high-resistance p-CdTe from vapor on a quartz or graphite substrate heated to 250—300°C. The specimens on a quartz base were characterized by a ratio $i_p/i_m = 120$. The specimens on a graphite base when illuminated through the upper semi-transparent electrode had a photocurrent $i_p = (30—35)$ μa. The spectral characteristic of the photoconductivity displays one maximum at 840 mμ. The slope of the temperature dependence corresponds to $\Delta E = 1.5$ ev. The photocurrent growth curve is characterized by an average value $t = 2 \times 10^{-4}$ sec, and the lifetime of the carrier is $\geq 10^{-5}$ sec.
A. Shneyder

DATE ACQ: 17 Jun 63 SUB CODE: PH ENCL: 00

Card 1/1

ZHMURKO, I.V.

ZHMURKO, I.V.

Summary lessons in geography classes. Geog. v shkole 21 no.2:45 Mr-Ap '58. (MIRA 11:2)

1. Boromlyanskaya shkola Sumskoy oblasti.
(Geography—Study and teaching)

ZHMURKO, N. N.

Anesthetics - Administration; Ether (Anesthetic)

Method of ether anesthesia. Fel'd. i akush. no. 3, '52 Akusherka

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.

ZHMURKO, N. N.

Nurses and Nursing

New style of gowns for the non-professional medical personnel. Fel'd.i akush. no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, April 1952. UNCLASSIFIED.

FUGZAN, M.D., kand. tekhn. nauk; SADOVSKIY, G.I., kand. tekhn. nauk;
ZHMURKO, P.T., gornyy inzh.; FILIPPENKOV, A.I., gornyy inzh.;
KOREN'KOV, E.N., gornyy inzh.; SHABLYGIN, A.I., kand. tekhn. nauk

Searching for optimal parameters of the induced block caving system at the "Zapoliarnyy" mine. Gor. zhur. no.6:19-24 Je '65. (MIRA 18:7)

ZHMUREO, V.

Radar observations of ice drift in the Tatar Strait. Mor. flot. 24 no.11:23-24 N '64. (MIRA 18:8)

1. Starshiy inzh.-okeanolog Sakhalinskogo upravleniya gidrometeorologicheskoy sluzhby.

VINOGRADOV, V.N.; ZHMURKO, V.Ya.

Snowslides. Priroda 52 no.12:123 '63. (MIRA 17:3)

1. Institut vylkanologii Sibirskogo otdeleniya AN SSSR, Petropavlovsk-Kamchatskiy.

ZHMUROV, G.I., inzh.; CHEBOTAREV, V.F., inzh.

Symbols for materials in specifications accompanying drawings.
Standartizatsiia 22 no.2:38-41 Mr-Ap '58. (MIRA 11:5)
(Mechanical drawing--Notation)

Zhmurov, G.I.

28-58-2-13/41

AUTHORS: Zhmurov, G.I., and Chebotarev, V.F., Engineers

TITLE: The Conventional Designation of Materials in Drawings (Uslovnyye oboznacheniya materialov v chertezhnoy dokumentatsii)

PERIODICAL: Standartizatsiya, 1958, Nr 2, pp 38-41 (USSR)

ABSTRACT: Recommendations for entering the technical specifications of materials on drawings, issued by different ministries and organizations, are not completely uniform. Misunderstanding of such specifications leads to rejection of production and handicapped cooperation between organizations. The authors make practical suggestions on the problem and make material specifications in drawings that are clearly understandable. There are 2 tables.

AVAILABLE: Library of Congress

Card 1/1 1. Drafting-Standards 2. Standardization-USSR

[redacted]

ZHMUROV, I. I.

SKVORTSOV, S. P., MASLENNIKOV, and ZHMUROV, I. I. CA: 31-174/4
Zavodskaya Lab. 5, 1220-4 (1936)
Heat capacity of high-speed tool steel.

[redacted]

ZHMUROV, I.I.,
A. A. SKVORTSOV, Zavodskaya Lab. 5, 1220-4 (1936)

ZHMUROV, V.

Vocation and years. Voen. znan. 41 no.10:16 O '65.

(MIRA 18:10)

ZHMUROV, V..

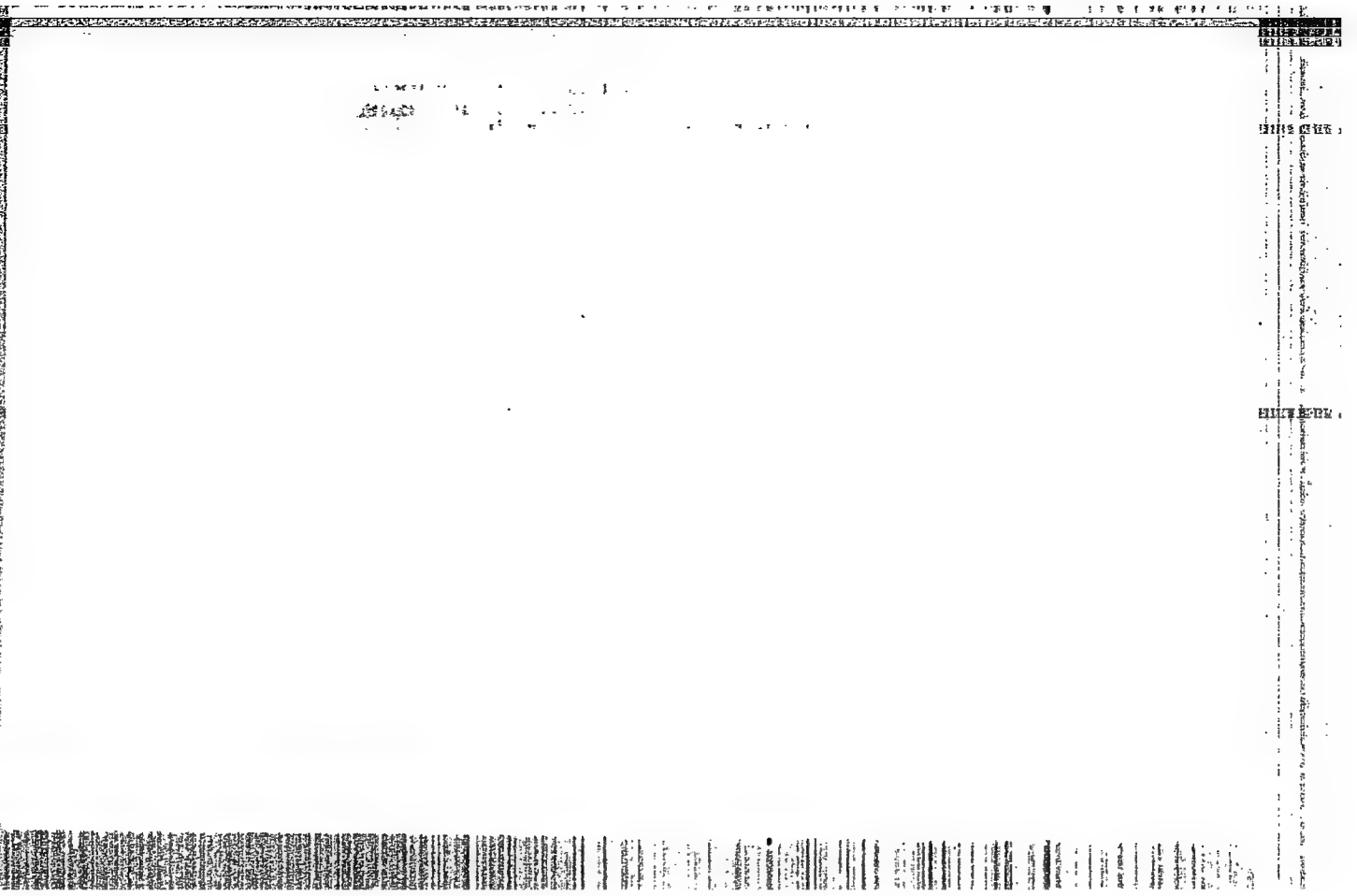
Refrigerator's "heart." Mest. prom. i khud. promys. no.5:10 My '63. (MIRA 16:7)

1. Glavnyy inzh. zavoda "Mosremelektrobytpribor."
(Refrigerators--Repairing)

ZHMUROVA, I.N.; KIRSANOV, A.V.

Mechanism of phosphazo reaction. Zhur.ob.khim. 32 no.8:2576-2580 Ag '62. (MIRA 15:9)

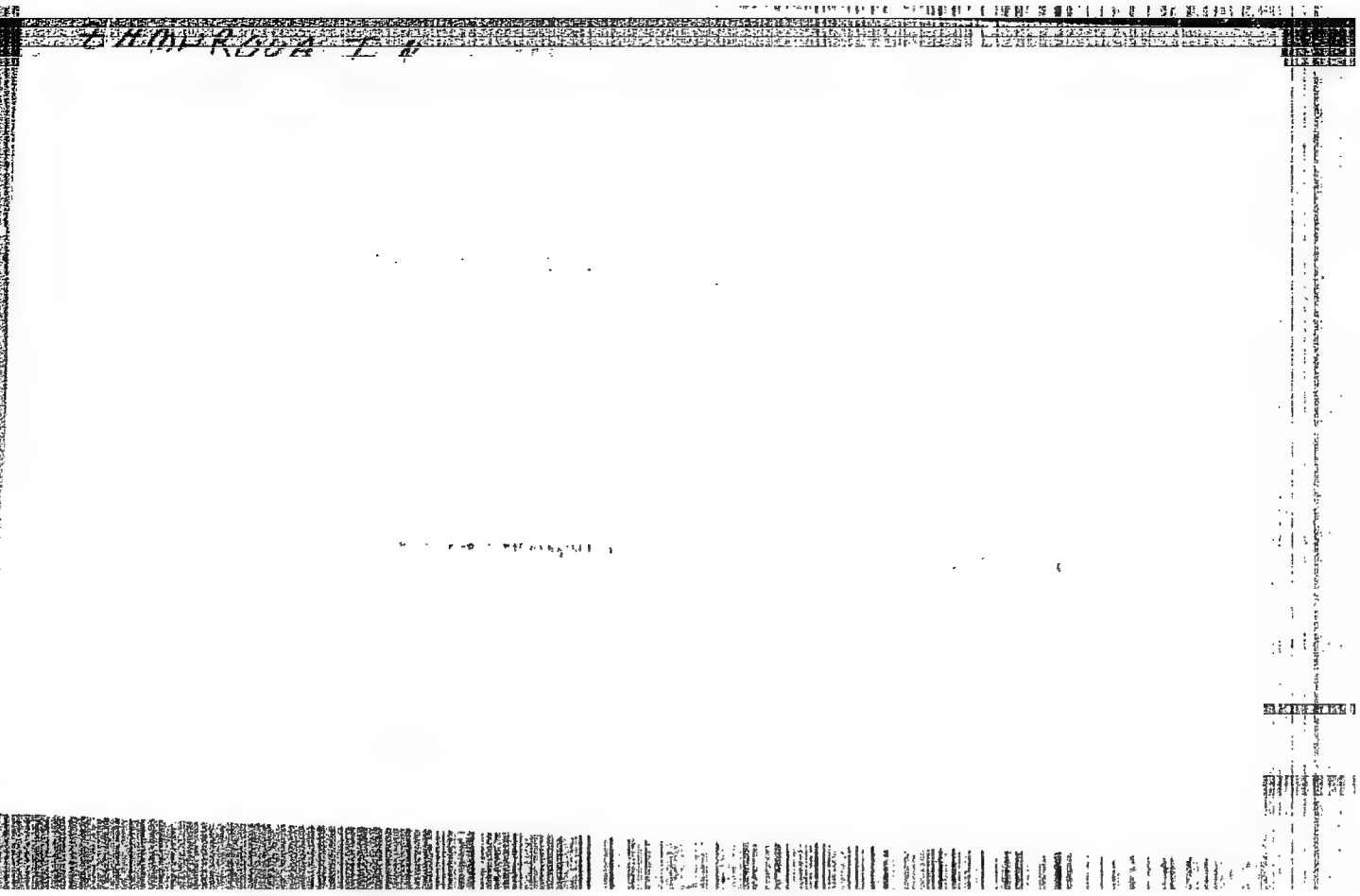
1. Institut organicheskoy khimii AN Ukrainskoy SSR.
(Phosphazo compounds)



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064830011-6"

KIPRIANOV, A.I.; ZHMUROVA, I.N. (Kiev).

Effect of steric hindrance on the properties of aromatic amines and nitro-compounds. Usp.khim. 22 no.10:1246-1277 '53. (MLRA 6:11)
(Stereochemistry) (Amines) (Nitro compounds)

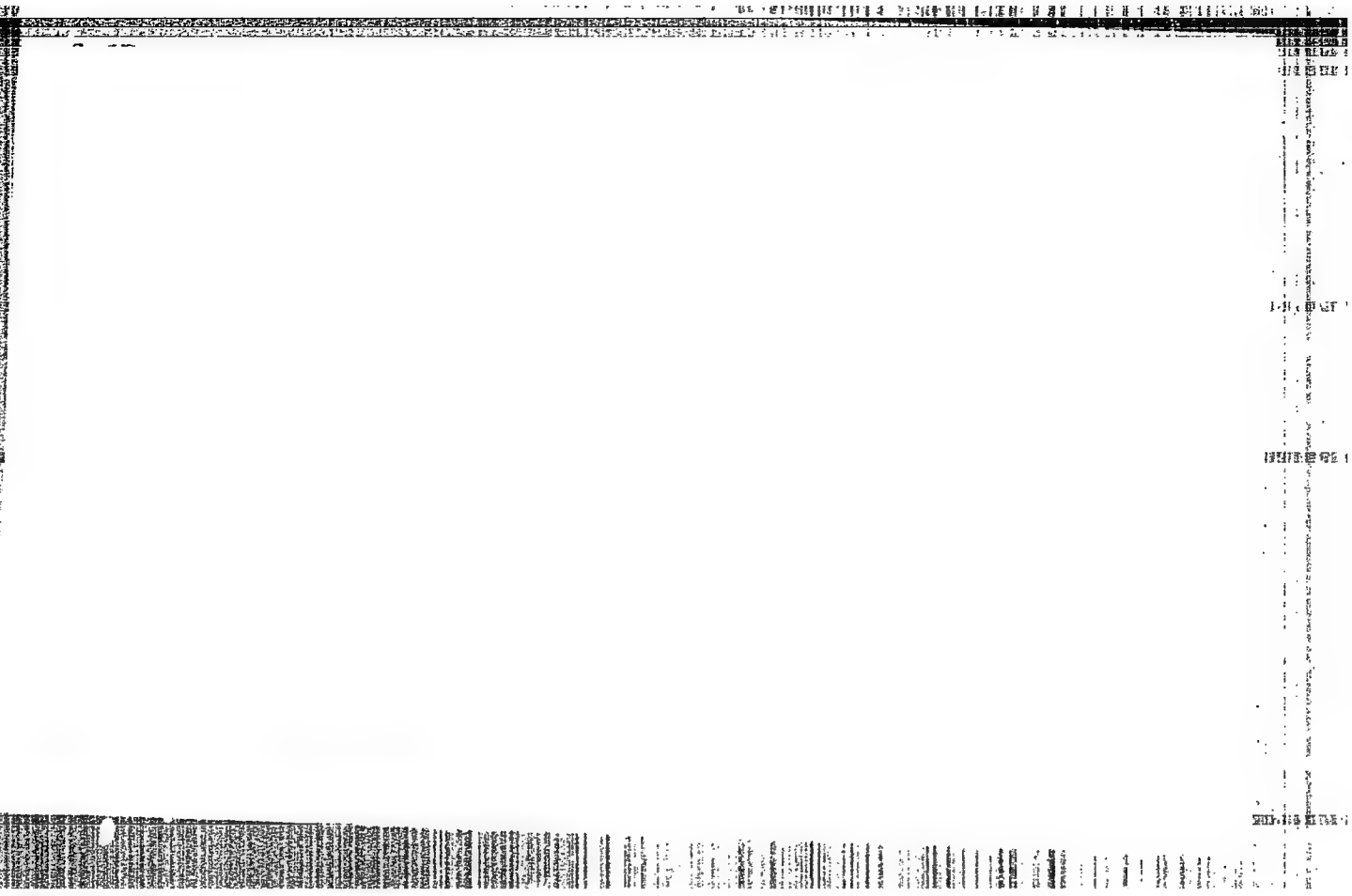


USSR

149

771.534.21

Auxochromic Effect of the Dimethylamino Group and its Coplanarity with the Benzene Ring.—II. A. I. KIPRIANOV and I. N. ZHURAVA. *J. Gen Chem. U.S.S.R.*, 1953, 23, 626-634.—The effect on the spectral characteristics of a dye of a disturbance, due to steric hindrance in the coplanarity of a [illegible] of the dye molecule and an [illegible]



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064830011-6"

ZHMUROVA, I. N.

1/2

Chemical Abst.
Vol. 48
Apr. 10, 1954
Organic Chemistry

(2)

Coplanarity of the nitro group with the benzene ring and its effect on the color of dyes. A. I. Kitaigorodskii and I. N. Zhmurova. *Zhur. Obshchei Khim.* 23, 877-80(1953); cf. following abstr.—Me and Et groups in the *o*-position to NO_2 have but a weak effect on the absorption. A *tert*-Bu group almost completely cancels the auxochromic action of the NO_2 group; the same effect is had by 2 Me groups in *o*-positions to NO_2. Refluxing 33 g. 4,5-Br(O_2N)C_6H_2Et in 70 ml. EtOH 2 hrs. with 10 g. $Na_2S.9H_2O$, 2.8 g. S, and 20 ml. EtOH gave 21.5 g. [4,2-Et(O_2N)C_6H_2S]$_2$, which, treated in 120 ml. AcOH with 42 g. Zn dust and 90 ml. concd. HCl, stirred 1 hr., filtered, dild., and treated with NaOAc, gave a ppt. of the Zn mercaptide, and this heated 2 hrs. with excess Ac_2O, gave 50% *2-methyl-5-ethylbenzothiazole*, an oil (*picrate*, m. 165–7°; *methiodide*, m. 199–201°). This (6 g.) added to 4.8 ml. HNO_3 (d. 1.4) and 12 ml. concd. H_2SO_4, stirred 20 min. on a water bath, and the product crystd. from EtOH and pptd. from dil. HCl gave 1.5 g. *6-nitro deriv.* (I), m. 100–2°, and 0.6 g. *4-nitro deriv.*, m. 94–6°. Refluxing 0.3 g. 2-methyl-5-ethylbenzothiazole, 0.3 g. $HC(OEt)_3$, and 3 ml. pyridine 0.5 hr. gave 50% green *bis(3-methyl-5-ethyl-2-benzthiazole)trimethinecyanine halide*, m. 290–2°, absorption max. 605 mμ. 2,5-Dimethyl-6-nitrobenzothiazole and *p*-$MeC_6H_4SO_2Et$ after 4 hrs. at 160–70° gave 42.5% quaternary salt, which, refluxed with $HC(OEt)_3$ in pyridine, gave 47% *bis(3-ethyl-5-methyl-6-nitro-2-benzothiazole)trimethinecyanine p-toluenesulfonate*, green, decomp. 267–8° (from EtOH), absorption max. 582 mμ. I heated with Me_2SO_4 2 hrs. at 100°, and the resulting quaternary salt refluxed in pyridine with $HC(OEt)_3$ gave 30% violet *bis(3-methyl-5-ethyl-6-nitro-2-benzothiazole)trimethinecyanine methosulfate*, m. above 300°, absorption max. 580 mμ. Heating 0.2 g. 2-methyl-5-*tert*-butyl-6-nitrobenzothiazole with 0.2 g. *p*-$MeC_6H_4SO_2Et$ 1 hr. at 150–60° gave 75% quaternary salt, which, refluxed 20 min. with $HC(OEt)_3$ in pyridine, gave 60% *bis(3-ethyl-5-tert-butyl-6-nitro-2-benzothiazole)trimethinecyanine p-toluenesulfonate*, green, decomp. 277° (from EtOH), absorption max. 570 mμ. 3,4-Me(O_2N)$C_6H_2NH_2$ (0.4 g.), diazotized and treated with 0.4 g. Me_2NPh in dil. HCl, yielded after several hrs. a ppt. which, dissolved in HCl and pptd. with NH_4OH, gave 40% crude product, purified by chromatography on Al_2O_3, yielding *4-dimethylamino-*

Inst. Org. Chem.
AS Ukr SSR

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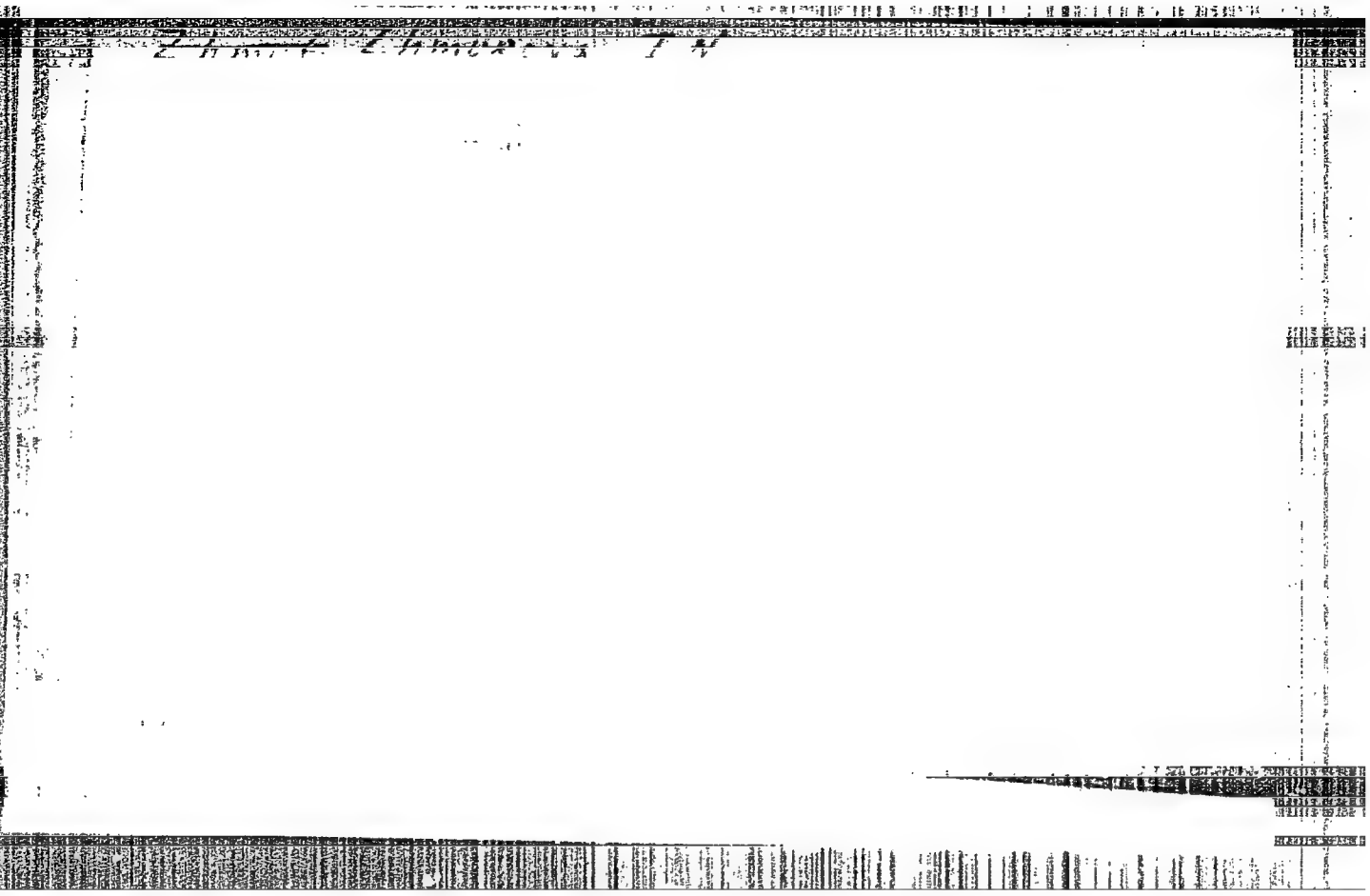
(2)

Kiprianov, A. I. (2)

3'-methyl-4'-nitroazobenzene, m. 160–2° (from C_6H_6), brown, absorption max. 460 mμ. 3,5,4-$Me_2(O_2N)C_6H_2NH_2$ (II) similarly gave 80% *4-dimethylamino-3',5'-dimethyl-4'-nitroazobenzene*, red, m. 176–8° (from EtOH), absorption max. 443 mμ. Diazotized II with o-$Me_2NC_6H_4Me$ in EtOH in the presence of NaOAc gave 40% *3,3',5'-trimethyl-4-dimethylamino-4'-nitroazobenzene*, orange, m. 112–14° (from EtOH), absorption max. 418 mμ.

G. M. Kosolapoff



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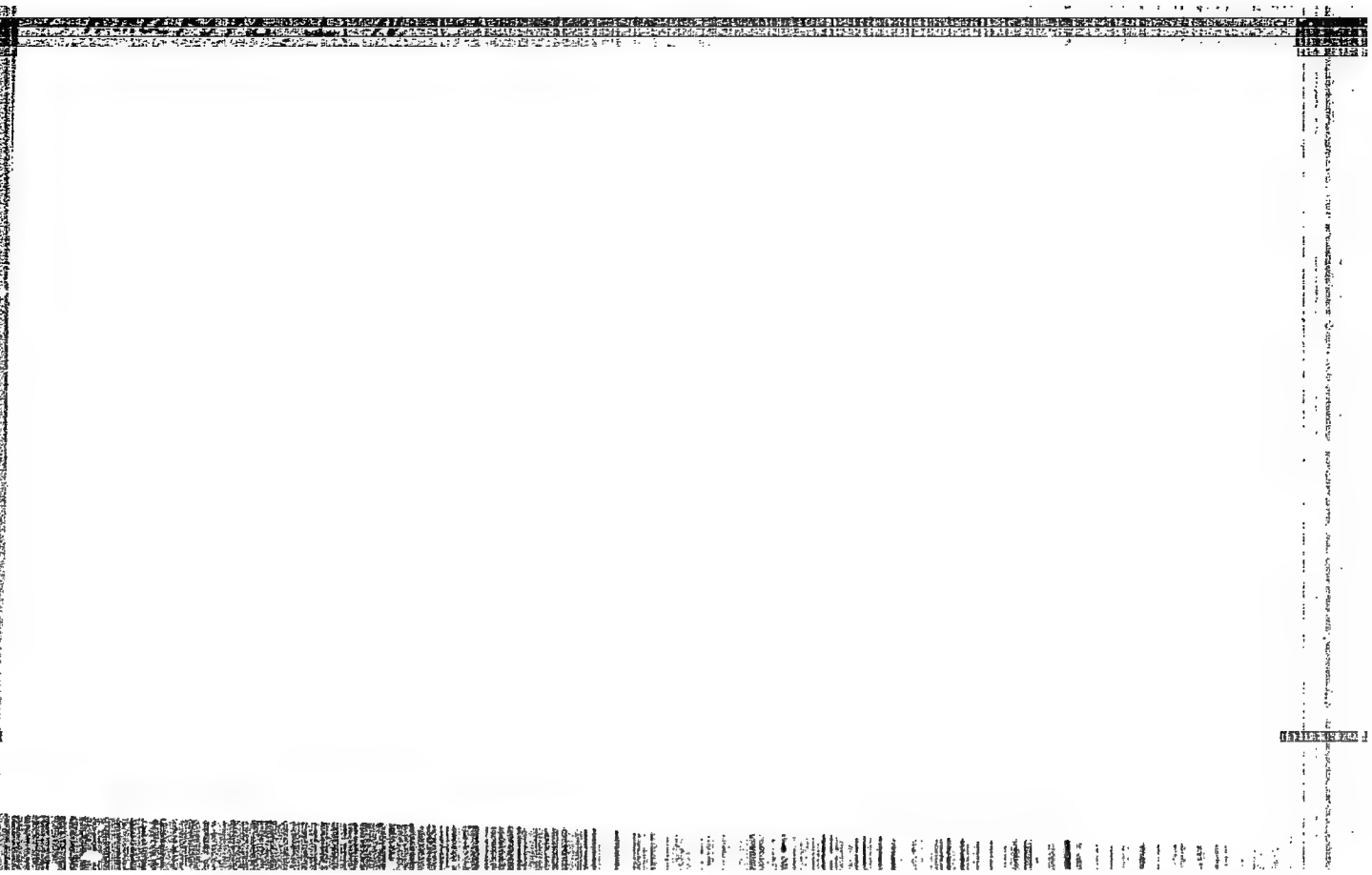

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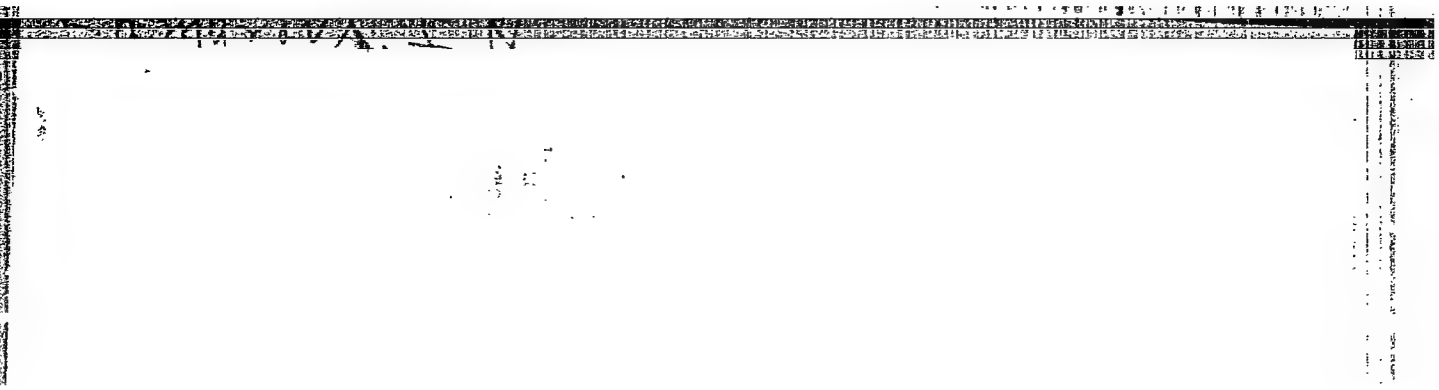

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ZHMUROVA, I. N.

"Esters of N-(Alkylthiocarbamate)-phosphoric and N-(Alkylthiocarbamate)-thiophosphoric Acids," by I. N. Zhmurova, Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR, Ukrainskiy Khimicheskiy Zhurnal, Vol 22, No 5, 1956, pp 627-629

The synthesis of the esters of N-(alkylthiocarbamate)-phosphoric and N-(alkylthiocarbamate)-thiophosphoric acids is discussed. These compounds have not been described in the literature previously. They were prepared by treating dialkylesters of isothiocyanophosphoric and isothiocyanothiophosphoric acids with various alcoholates.

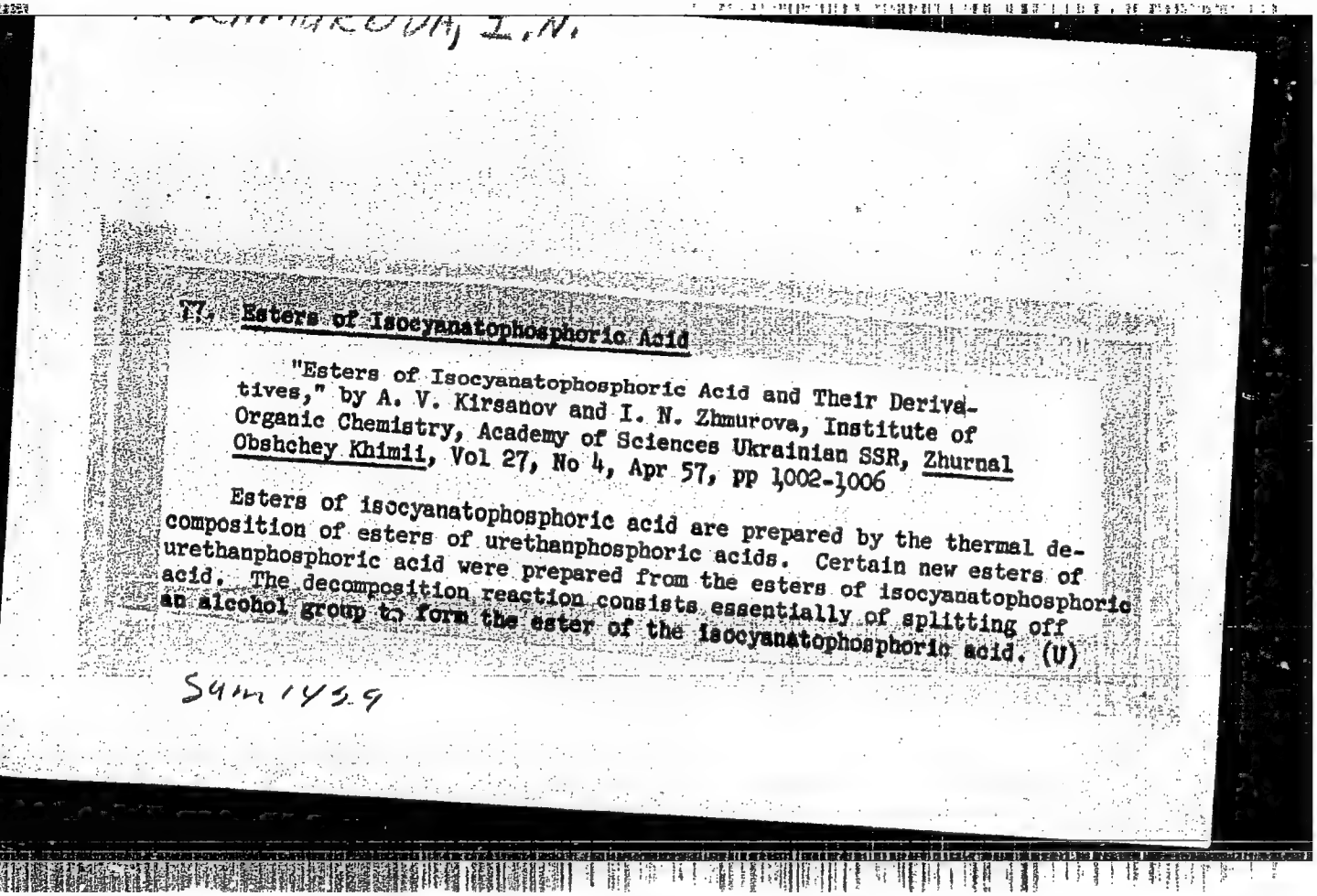
Sum 1219

KIRSANOV, A.V.; ZHMUROVA, I.N.

Acid chlorides and esters of urethanphosphoric acids. Zhur. ob.khim. 26 no.9:2642-2648 S '56. (MLRA 9:11)

1. Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR.

(Chlorides) (Urethanphosphoric acid)



Zhmurova, I. N.

77. Esters of Isocyanatophosphoric Acid

"Esters of Isocyanatophosphoric Acid and Their Derivatives," by A. V. Kirsanov and I. N. Zhmurova, Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR, Zhurnal Obshchey Khimii, Vol 27, No 4, Apr 57, pp 1,002-1,006

Esters of isocyanatophosphoric acid are prepared by the thermal decomposition of esters of urethanphosphoric acids. Certain new esters of urethanphosphoric acid were prepared from the esters of isocyanatophosphoric acid. The decomposition reaction consists essentially of splitting off an alcohol group to form the ester of the isocyanatophosphoric acid. (U)

Sum 1453

ZHMUROVA, I.N.; DRACH, B.S.

Trichlorophosphazo alkyls. Zhur. ob. khim. 34 no. 5:1444-1446 My '64. (MIRA 17:7)

1. Institut organicheskoy khimii AN UkrSSR.

ZHMUROVA, I.N.; DRACH, B.S.

Trichlorophosphazo alkyls. Zhur. ob. khim. 34 no.9:3055-3060 S '64. (MIRA 17:11)

1. Institut organicheskoy khimii AN UkrSSR.

DERKACH, Grigoriy Ilarionovich; ZIMUROVA, Irina Nikolayevna; KIRSANOV, Aleksandr Vasil'yevich; SHEVCHENKO, Vartanin Isaakovich; SHRANEK, Alla Stanislavovna; POKROVSKAYA, Z.S., red.

[Phosphazo compounds] Fosfazosoedineniia. Kiev, Naukova dumka, 1965. 283 p. (MIRA 18:8)

ZHMUROVA, I.N.; VOYTSEKHOVSKAYA, I.Yu.

Alkyltetrachloro phosphorus. Zhur.ob.khim. 35 no.12:2197-2200 D '65. (MIRA 19:1)

1. Institut organicheskoy khimii AN UkrSSR. Submitted January 18, 1965.

L 21761-66 EWT(m) RM

ACC NR: AP6012649 SOURCE CODE: UR/0079/65/035/002/0344/0350

AUTHOR: Zhmurova, I. N.; Drach, B. S.; Kirsanov, A. V.

ORG: Institute of Organic Chemistry, AN UkrSSR (Institut organicheskoy khimii AN UkrSSR)

TITLE: Acid chlorides of trichlorophosphazo-trichlorophosphazo-alpha-carboxyalkyls

SOURCE: Zhurnal obshchey khimii, v. 35, no. 2, 1965, 344-350

TOPIC TAGS: amino acid, chlorination, organic phosphorous compound, chloride, phosphorous chloride

ABSTRACT: When two or more moles of phosphorus pentachloride react with α-aminoacids, acid chlorides of trichlorophosphazo-α-carboxylalkyls are obtained. In most cases the phosphazo-reaction is accompanied by chlorination of the alkyl group of the amino acid, where usually not less than two chlorine atoms are in the alkyl group. The mean values of atomic refractions of nitrogen for acid chlorides of trichlorophosphazo-α-carboxyalkyls and trichlorophosphazoalkyls were calculated. Orig. art. has: 9 formulas and 2 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 12Dec63 / ORIG REF: 007 / OTH REF: 003

Card 1/1 UDC: 547.466+546.185'131

ACC NR: AP6016698 SOURCE CODE: UR/0079/65/035/012/2197/2200

AUTHOR: Zhmurova, I. N.; Voytsekhovskaya, I. Yu. 21 B

ORG: Institute of Organic Chemistry, AN UkrSSR (Institut organicheskoy khimii AN UkrSSR)

TITLE: Phosphorus alkyltetrachlorides

SOURCE: Zhurnal obshchey khimii, v. 35, no. 12, 1965, 2197-2200

TOPIC TAGS: chlorinated organic compound, phosphoric acid, sulfur compound

ABSTRACT: When treated with chlorine at -20 to 15°, isopropyl-, butyl-, isobutyl, amyl- and isoamyldichlorophosphines yield unstable alkyktetrachlorophosphoruses which decompose when heated above 0°. At 20-30° butyldichlorophosphine is chlorinated to dichlorobutyltetrachlorophosphorus, and propyldichlorophosphine is converted into propyltetrachlorophosphorus. Alkyltetrachlorophosphoruses react with sulfur dioxide or succinnic acid to form the acid dichlorides of alkylphosphonic acids, $RPOCl_2$, where R = $n\text{-}C_3H_7$, $iso\text{-}C_3H_7$, C_4H_9, $iso\text{-}C_4H_9$, $C_4H_7Cl_2$, C_5H_{11} or $iso\text{-}C_5H_{11}$ whose characteristics are presented.

The authors express their thanks to A. V. Korsanov for aid and council on the research. Orig. art. has: 1 table. [JPRS]

SUB CODE: 07 / SUBM DATE: 18Jan65 / ORIG REF: 008 / OTH REF: 009

Card 1/1 FV UDC: 457.241

ACC NR: AM5027772 Monograph UR/

Derkach, Grigoriy Illarionovich; Zhmurova, Irina Nikolayevna; Kirsanov, Aleksandr Vasil'yevich; Shevchenko, Veniamin Isaakovich; Shtepanek, Alla Stanislavovna

Phosphazo compounds (Fosfazosoyedineniya) Kiev, Izd-vo "Naukova dumka," 1965. 283 p. illus., biblio. (At head of title: Akademiya nauk Ukrainskoy SSR. Institut organicheskoy khimii) 2000 copies printed.

TOPIC TAGS: organic phosphorus compound, nitrogen compound, organic azo compound

PURPOSE AND COVERAGE: The introduction contains a review of recent research in the field and a discussion of the problems connected with inconsistencies in terminology. The nomenclature employed is that first proposed by A. Mikhaelis. The book deals with data on the chemistry of phosphazo compounds, published in the scientific press up to 1 January 1964, and presents lists of the phosphazo compounds that are known at the present time. It is intended for scientists, industrial workers, teachers, and students interested in modern progress in organic chemistry, especially those working in the field of phosphor-organic compounds. Each chapter deals with a different class of compounds, for which the authors give the method of preparation, the chemical properties, a list of compounds, and an appropriate bibliography.

TABLE OF CONTENTS [abridged]:

Card 1/2 UDC: 547

ACC NR: AM5027772

SUB CODE: 07/ SUBM DATE: 10Apr65/ ORIG REF: 222/ OTH REF: 319

Card 2/2

ZHMUROVA, I.N.; DRACH, B.S.

Reaction of phosphorus pentachloride with isopropylamine and α-alanine. Zhur. ob. khim. 35 no.4:718-723 Ap '65.
(MIRA 18:5)

1. Institut organicheskoy khimii AN UkrSSR.

ZHMUROVA, I.N.; DRACH, B.S.; KIMSANOV, A.V.

Chlorination of hydrocarbon radicals of aliphatic trichlorophosphazo compounds by phosphorus pentachloride. Ukr.khim.zhur. 31 no.2:223-224 '65. (MIRA 18:4)

1. Institut organicheskoy khimii AN UkrSSR.

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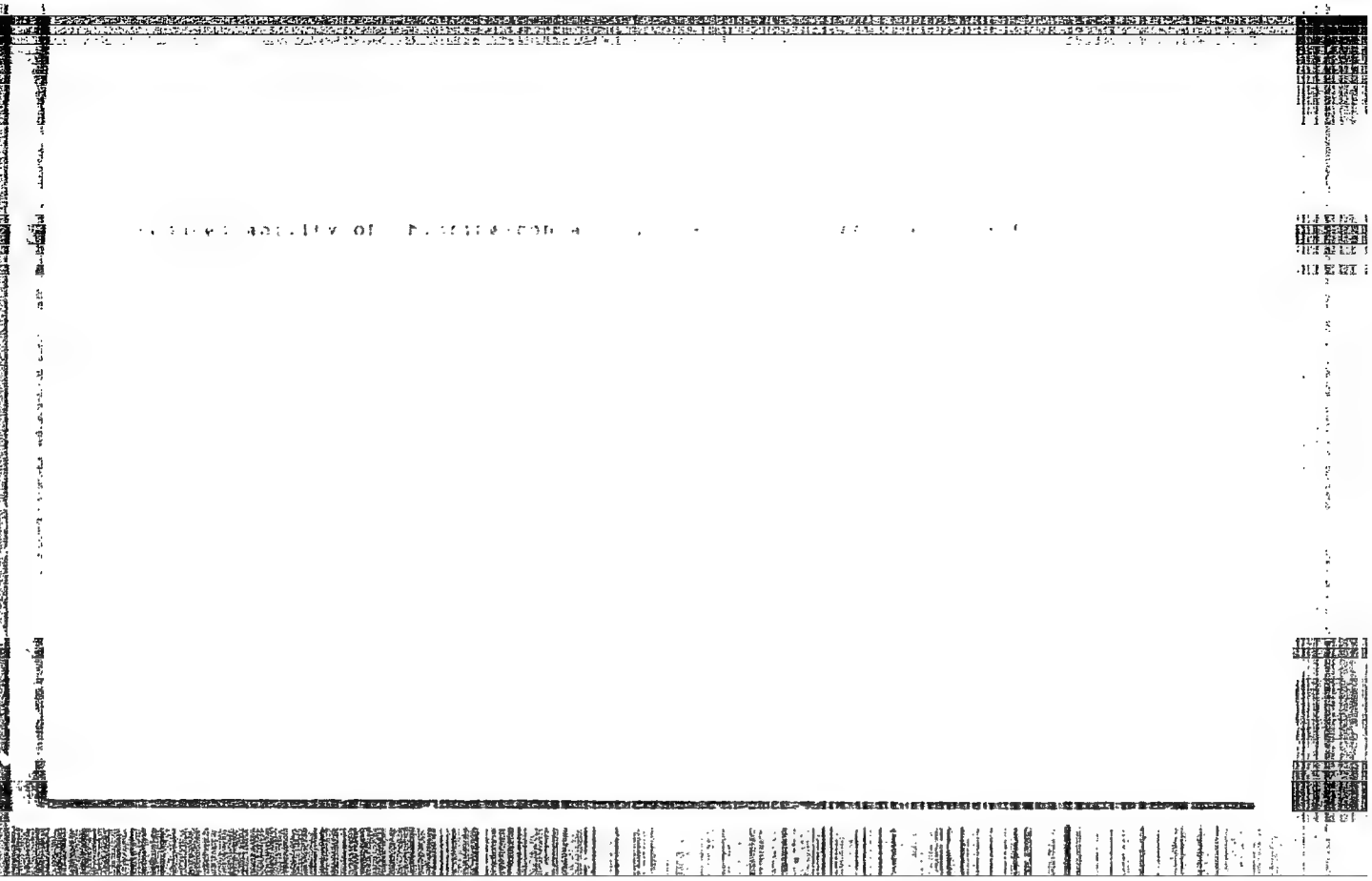

ZHMUROVA, I.N.; DRACH, B.S.; KIRSANOV, A.V.

Hydrolysis and acidolysis of trichlorophosphaze alkyls and trichlorophosphaze-α-carboxyl alkyl chlorides. Zhur. ob. khim. 35 no.6:1018-1022 Je '65. (MIRA 18:6)

1. Institut organicheskoy khimii AN UkrSSR.

ZHMUROVA, I.N.; KISILENKO, A.A.; KIRSANOV, A.V.

Infrared spectra of monomer and dimer trichlorophosphazo aryls and phenyldichlorophosphazo aryls. Zhur.obshch.khim. 32 no.8:2580-2585 Ag '62. (MIRA 15:9)

1. Institut organicheskoy khimii AN Ukrainskoy SSR.
(Phosphazo compounds--Spectra)

S/079/63/033/001/010/023
D205/D307

AUTHORS: Zhmurova, I. N. and Kirsanov, A. V.

TITLE: The acidolysis of monomeric and dimeric phenyldichlorophosphazoaryls

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 1, 1963, 182-188

TEXT: Compounds $C_6H_5P(O)(NHAr)Cl$ (I), where Ar=C_6H_5, m-$CH_3 \cdot C_6H_4$, p-$CH_3 \cdot C_6H_4$, m-ClC_6H_4, p$CH_3OC_6H_4$ and p-$EtOC_6H_4$ were prepared by monomerizing $(ArN=PCl_2C_6H_5)_2$ by boiling with benzene, cooling the monomeric solution and treating it with acetic acid. The reactions could also be carried out without isolating the dimers prior to monomerization. Compounds of type I, where Ar=o-$CH_3C_6H_4$, o-ClC_6H_4, m-ClC_6H_4, 2,4-$Cl_2C_6H_3$, 2,4,6-$Cl_3C_6H_2$, o-BrC_6H_4, m-BrC_6H_4, p-BrC_6H_4, 2,4-$Br_2C_6H_3$, 2,4,6-$Br_3C_6H_2$, o-$NO_2C_6H_4$, m-$NO_2C_6H_4$, p-$NO_2C_6H_4$, 2,4-

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S/079/63/033/001/010/023
D205/D307

The acidolysis of ...

$(NO_2)_2C_6H_3$ and 2,6-Cl_2-4-$NO_2C_6H_2$ were also made, by the acidolysis of monomeric phenyldichlorophosphazoaryls with CH_3COOH, using benzene or CCl_4 as solvent. The yields of compounds I varied between 57 and 97%. Polymeric anhydroaryliminophenylphosphinic acids $[ArNP(O)C_6H_5]_n$, where Ar=C_6H_5, p-$CH_3C_6H_4$, p-$CH_3OC_6H_4$, and p-$C_2H_5OC_6H_4$ were obtained by the acidolysis of $(ArN=PCl_2C_6H_5)_2$ without monomerization, with gentle heating over 5 - 6 hrs together with CH_3COOH in benzene solution, in 52 - 87% yields. There is 1 table.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR (Institute of Organic Chemistry of the Academy of Sciences of the Ukrainian SSR)

SUBMITTED: January 10, 1962

Card 2/2

ZHMUROVA, I.N.

Esters of monoarylides of phenylphosphinic acid. Zhur.ob.khim. 33 no.2:549-551 F '63. (MIRA 16:2)

1. Institut organicheskoy khimii AN UkrSSR.
(Phosphinic acid) (Anilides)

ZHMUROVA, I.N.; KIRSANOV, A.V.

Diphenylchlorophosphazo aryls. Zhur.ob.khim. 33 no.3:1015-1017 Mr '63. (MIRA 16:3)

1. Institut organicheskoy khimii AN UkrSSR.
(Phosphorus organic compounds)

ZHMUROVA, I.N.; VOYTSEKHOVSKAYA, I.Yu.

Phenylphosphinic acid diamides. Zhur.ob.khim. 33 no.4:1349-1351 Ap '63. (MIRA 16:5)

1. Institut organicheskiy khimii AN UkrSSR.
(Phosphinic amide)

ZHMUROVA, L.A.

Khimiya i Primeneniye Fosforoorganicheskikh Soyedineniy (Chemistry and Application of Organophosphorus Compounds) A. Ye. Arbuzov, Ed., publ. by Kazan' Affil, Acad. Sci. USSR, Moscow, 1962 632pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

KIRSANOV, A.V., LEUCHENKO, YE.S., ZHMUROVA, I.N., ZHURAVLEVA, L.P.
MARENETS, M.S.

Isocyanates of phosphorus.

Khimiya i Primeneniye Fosfororganicheskikh Soyedineniy (Chemistry and application of organophosphorus compounds) A. YE. ARBUZOV, Ed. Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962, 632 pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

ZHMUROVA, I.N.; KIRSANOV, A.V.

Phenyldichlorophosphazoaryls. Zhur. ob. khim. 31 no. 11:3685-3689 N '61. (MIRA 14:11)

1. Institut organicheskoy khimii AN Ukrainskoy SSR.
(Phosphorus organic compounds)

ZHMUROVA, I.N.; VOYTSEKHOVSKAYA, I.Yu.; KIRSANOV, A.V.

Triphenoxyphosphazoaryls. Zhur. ob. khim. 31 no. 11:3741-3764 N '61. (MIRA 14:11)

1. Institut organicheskoy khimii AN Ukrainskoy SSR.
(Phosphazo compounds)

ZHMUROVA, I.N.; KIRSANOV, A.V.

Hydrolysis and acidolysis of monomeric and dimeric trichlorophosphazo aryls. Zhur. ob. khim. 30 no.12:4048-4053 D '60. (MIRA 13:12)

1. Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR.
(Phosphazo compounds)

S/079/60/030/012/017/027
B001/B064

53630

AUTHORS: Zhmurova, I. N. and Kirsanov, A. V.

TITLE: Hydrolysis and Acidolysis of Monomeric and Dimeric Trichlorophosphazoaryls

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 12, pp.4048-4053

TEXT: The trichlorophosphazoaryls ($ArN=PCl_3$) obtained in the previous paper (Ref.1) are easily hydrolyzed by air moisture. They acidolyse with formic and acetic acid to aryl amidophosphoric acid dichlorides (I)-(IV) (Table 1). In contrast to monomeric trichlorophosphazo aryls the dimeric compounds are not transformed into aryl amidophosphoric acid dichlorides during hydrolysis or acidolysis. Dichlorides of the arylamidophosphoric acid (V)-(XII) (Table 1) may be obtained by the method described in Ref.1 under the action of formic acid on the solutions of monomeric trichlorophosphazoaryls according to reaction (A). The latter are easily hydrolyzed with water (some of them even by air moisture) which renders their purification difficult. On prolonged heating in dissolved state or on water bath without solvent, they gradually decompose. The authors proved

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the identity of arylamidophosphoric acids which are mentioned by Michaelis (Ref.2). On reacting PCl_5 with arylamidophosphoric acid dichlorides the initial products were obtained in high yields, i.e., the monomeric and dimeric trichlorophosphazoaryls (Ref.1):

$$ArNHPOCl_2 + PCl_5 \longrightarrow POCl_3 + HCl + ArN{=}PCl_3$$

$$2\,ArNHPOCl_2 + 2PCl_5 \longrightarrow 2POCl_3 + 2HCl + (ArN{=}PCl_3)_2 .$$

The structure of dimeric trichlorophosphazoaryls could be determined by partial hydrolysis only in four dimers. According to the elementary analysis, their molecular weight and the chemical properties, the reaction products obtained in this connection are acid chlorides of N,N'-diaryl-N-dichlorophosphinyl diamidophosphoric acid (Table 2). All other dimers gave only viscous resins. In crystalline state N,N'-diaryl-N-dichlorophosphinyl diamidophosphoric acid chlorides are rather stable; on heating in organic solvents or $POCl_3$, they rapidly decompose. Their structure was confirmed by converting them into the dimeric initial trichlorophosphazo aryls with 2 moles PCl_5. There are

Hydrolysis and Acidolysis of Monomeric and Dimeric Trichlorophosphazoaryls

S/079/60/030/012/017/027
B001/B064

2 tables and 2 references: 1 Soviet and 1 German.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR (Institute of Organic Chemistry of the Academy of Sciences Ukrainskaya SSR)

SUBMITTED: January 28, 1960

Card 3/3

ZHMUROVA, I.N.; KIRSANOV, A.V.

Trichlorophosphazoaryls. Zhur. ob.khim. 30 no.9:3044-3054 S '60.
(MIRA 13:9)

1. Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR.
(Phosphazo compounds)

S/079/60/030/009/011/015
B001/B064

AUTHORS: Zhmurova, I. N., Kirsanov, A. V.

TITLE: Trichloro-phosphazo Aryls

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 9, pp.3044-3054

TEXT: In continuation of papers of Refs. 1-4 the authors studied the reaction of phosphorus pentachloride with a series of aromatic amines and some derivatives of aryl amido phosphoric acids. Trichloro-phosphazo acyls are obtained almost quantitatively on the action of PCl_5 on acid amides (Ref. 1). On the reaction of aromatic amines or their hydrochloric salts with PCl_5 in boiling carbon tetrachloride compounds are obtained in good yields, which, in their composition, precisely correspond to chloro-phosphazo aryls (Table 1). $ArNH_2 + PCl_5 \longrightarrow 2HCl + ArN = PCl_3$ (I)

$ArNH_3Cl + PCl_5 \longrightarrow 3HCl + ArN = PCl_3$ (II)

Amines with basicity $K_{bas} = 10^{-9} - 10^{13}$ give rise to trichloro-phosphazo aryls in the form of dimers, while low-basicity amines yield such in the form of monomers. Dimers of trichloro-phosphazo aryls obtained from amines

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with $K_{bas} = 10^{-9} - 10^{-10}$, are decomposed, on boiling, in benzene solutions, and not in monomers, whereas dimers from low-basicity amines are partly or wholly decomposed into monomers. Monomers of trichloro-phosphazo aryls resulting from amines with basicity $K_{bas} = 10^{-10} - 10^{-13}$, could be obtained in benzene solution only. When their solutions are evaporated, the monomers are converted into the respective dimers. Trichloro-phosphazo aryls from amines, with $K_{bas} = 10^{-14} - 10^{-19}$ resemble the trichloro-phosphazo acyls as to their physical and chemical properties. Again with respect to these properties, the dimers of trichloro-phosphazo aryls differ sharply from trichloro-phosphazo acyls and apparently possess a cyclic "benzoid structure". Dimers of trichloro-phosphazo aryls likewise result on the action of PCl_5 on a series of aryl amido phosphoric acids. The dimers of trichloro-phosphazo aryls derive their importance from the fact that they are also formed by the reaction of phosphorus pentachloride with various derivatives of aryl amido phosphoric acids (Table 2). There are 2 tables and 13 references: 1 Soviet, 6 US, 1 German, 3 British, and 2 French.

Trichloro-phosphazo Aryls

S/079/60/030/009/011/015
B001/B064

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR
(Institute of Organic Chemistry of the Academy of Sciences of the Ukrainskaya SSR)

SUBMITTED: July 31, 1959

Card 3/3

5 (3)

AUTHORS: Levchenko, Ye. S., Zhmurova, I. N., Kirsanov, A. V.

SOV/79-29-7-34/83

TITLE: Reaction of Phosphorus Pentachloride With Acid Dichlorides and Diesters of the Aryl Sulphonamidophosphoric Acids (Reaktsiya pyatikhloristogo fosfora s dikhlorangidridami i diefirami aril-sul'fonamidofosfornykh kislot)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2262 - 2267 (USSR)

ABSTRACT: Kirsanov succeeded in transforming the trichloro phosphazosulphonalkyls and aryls of the type $RSO_2N{=}PCl_3$ into the acid dichlorides of the corresponding alkyl- and aryl sulphonamidophosphoric acids according to the scheme $RSO_2N{=}PCl_3+H_2O \longrightarrow HCl+RSO_2NHPOCl_2$ by the action of water or formic acid (Ref 1). It was of interest to find out whether a reverse transformation was possible, i.e. whether the corresponding trichlorophosphazo compounds could be obtained according to the scheme $RSO_2NHPOCl_2+PCl_5 \longrightarrow HCl + POCl_3 + RSO_2N = PCl_3$(I) from the acid dichlor-

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Reaction of Phosphorus Pentachloride With Acid Dichlorides and Diesters of the Aryl Sulphonamidophosphoric Acids

SOV/79-29-7-34/83

ides of aryl sulphonamidophosphoric acids. The experiments showed that the reaction (I) for the acid dichlorides of o-, m-, and p-nitrophenyl sulphonamidophosphoric acids takes place at 130 - 135° within 10-15 min in yields of from 47 to 80% as well as for phenyl ester of the N-(dichlorophosphinyl)-monoamide of p-benzene disulphonic acid at 115-120° within 20-25 min in a yield of 49%. In all cases by-products of unknown nature are formed. Also in the reaction of PCl_5 with the potassium salts of the acid dichlorides of nitrophenyl sulphonamidophosphoric acids the same yields were obtained. In the action of PCl_5 on the acid dichlorides of aryl sulphonamidophosphoric acids, the molecules of which contain no other substituents in the aromatic nucleus, no corresponding trichlorophosphazo sulphonaryls are formed. In the reaction of PCl_5 with the diphenyl esters of the above acids the diphenoxy chlorophosphazosulphonaryls, irrespective of the nature and the position of the substituents, are obtained in the aromatic nucleus of sulphonic

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Reaction of Phosphorus Pentachloride With Acid Dichlorides and Diesters of the Aryl Sulphonamidophosphoric Acids

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acid (Scheme 3). The constants, analytical data and the yields of the diphenoxy chlorophosphazosulphonaryls are tabulated. There are 1 table and 7 Soviet references.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR (Institute of Organic Chemistry of the Academy of Sciences of the Ukrainskaya SSR)

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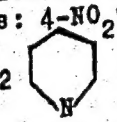
SOV/79-29-5-60/75

5(3)

AUTHORS: Zhmurova, I. N., Kirsanov, A. V.

TITLE: Extension of the Range of Applicability of the Phosphazo Reaction (Rasshireniye granits primeneniya fosfazoreaktsii)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 5, pp 1687-1694 (USSR)

ABSTRACT: By the action of phosphorus pentachloride on triaryl phosphite one obtains triaroxy- phosphorus dichlorides. Not only phosphorus pentachloride but also pentaphenoxy phosphorus and triphenoxy phosphorus dichloride may be utilized as phosphorus containing components for phosphazo reactions. Triphenoxy phosphazo aryls are obtained by the reaction of the above-mentioned compounds with aromatic amines. Production and properties of the following compounds are given. Triphenoxy phosphorus dichloride, pentaphenoxy phosphorus, triphenoxy phosphazo phenyl, triphenoxy phosphazo nitrophenyls $ArN{=}P(OC_6H_5)_3$ with the aryl radicals: $4\text{-}NO_2C_6H_4$, $2,4\text{-}(NO_2)_2C_6H_3$, $3,4\text{-}(NO_2)_2C_6H_3$,  , $2,4,6\text{-}(NO_2)_3C_6H_2$ (Table 1), triphenoxy phosphazoacyls $AcN{=}P(OC_6H_5)_3$ with the acyl radicals: $C_6H_5SO_2$, $SO_2\left[N{=}P(OC_6H_5)_3\right]_2$, $(C_6H_5O)_2PO$,

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Extension of the Range of Applicability of the Phosphazo Reaction

$(C_6H_5O)_2PS$ (Table 2). Diphenyl ether of aryl amido phosphoric acids $(C_6H_5O)_2PONHAr$ with the aryl radicals: C_6H_5, $4\text{-}NO_2C_6H_4$, $2,4\text{-}(NO_2)_2C_6H_3$, $3,4\text{-}(NO_2)_2C_6H_3$,  (Table 3).

There are 3 tables and 19 references, 10 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR (Institute of Organic Chemistry of the Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: April 5, 1958

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5 (3)

AUTHORS: Zhmurova, I. N., Voytsekhovskaya, I. Yu., SOV/79-29-6-67/72
Kirsanov, A. V.

TITLE: Direct Amidation of Carboxylic Acids (Neposredstvennoye amidirovaniye karbonovykh kislot)

PERIODICAL: Zhurnal obshchey khirii, 1959, Vol 29, Nr 6, pp 2083 - 2088 (USSR)

ABSTRACT: In this investigation the authors attempted to extend the scope of application of direct amidation of carboxylic acids, under "softer conditions in a pyridine solvent" (Ref 3) without examining the question of amidation under "harder conditions at higher temperatures". Different amides affect carboxylic acids quite differently. It is especially unintelligible that several homologues and analogues of trianilide of the phosphoric acid do not react with carboxylic acids, when heated in pyridine. The question was of interest, whether the amides of the monobasic phosphoric acids occur in pyridine as an agent of amidation, and whether for amidation under "soft conditions" the presence of two groups of amides in the molecule is necessary, in which at least one "free" hydrogen atom, connected with the nitrogen atom of the amide group (Ref 2) has to be present.

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Direct Amidation of Carboxylic Acids SOV/79-29-6-67/72

Amides of the type $(RO)_2PONH_2$ and Ar_2PONH_2 and their N-substituted compounds were selected as samples to be analysed. The amide and the dimethyl amide of the diphenylphosphinic acid amidate the carboxylic acids, when heated in pyridine or dioxane and are very easily saponified. The amidation capacity of the amides of the diphenylphosphinic and diphenylthiophosphinic acids corresponds to their easiness of saponification i.e. to their capacity to combine with hydroxyl. The amide, dimethylamide and phenylamide of the diphenylthiophosphinic acid and the phenylamide of diphenylphosphinic acid do not amidize the carboxylic acid under the same conditions, and it is difficult to saponify them. The mechanism of amidation of carboxylic acids with amide and dimethylamide of the diphenylphosphinic acid differs from the mechanism of amidation of the carboxylic acids with amides of the sulphuric acid. Some amides of the diphenylphosphinic and diphenylthiophosphinic acid were synthesized. The amidation with the amide of the diphenylphosphinic acid, according to the scheme

$$RCOOH + (C_6H_5)_2PONH_2 \longrightarrow RCONH_2 + (C_6H_5)_2POOH$$

takes place especially smoothly. In the table amides of both

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